

## Claim Amendments

In response to the Office Action dated December 12, 2003, please amend the claims of the subject application as follows:

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1. (currently amended) A method for sharing data between a relational database and a hierarchical database, comprising:

defining a hierarchical data entity including a plurality of simple and compound elements,

comprising:

identifying an entity path and mapped fields in each simple element; and

identifying an entity path, a database name, a database command, and database

fields in each compound element;

mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database, comprising:

for each compound element, specifying a data source, specifying a database  
command, executing the database command, receiving database field names  
from the relational database, and adding the database field names to the  
compound element;

for each simple element, selecting a database field name in a parent element  
corresponding to the simple element, and specifying a data transformation  
algorithm associated with the simple element;

transforming the relational dataset information into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure; and

accessing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

2. (original) The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining a hierarchical data entity including a plurality of elements containing a data entity structure and mapping information.

3. (original) The method of claim 2, further comprising identifying each of the plurality of elements by an element name without reference to an entity path.

4. (original) The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining a hierarchical data entity including a plurality of elements containing a data entity structure and defining a hierarchical map structure corresponding to the hierarchical data entity containing mapping information.

5. (original) The method of claim 4, further comprising identifying each of the plurality of elements by an entity path referencing all parent elements in the entity path.

6. (canceled) The method of claim 1, wherein the step of defining a hierarchical data entity comprises defining simple elements and compound elements.

7. (currently amended) The method of ~~claim 6~~ claim 1, wherein the step of defining a simple element comprises defining identifying an element name and mapped fields in each simple element.

8. (canceled) The method of claim 6, wherein the step of defining a simple element comprises defining an entity path and mapped fields.

9. (currently amended) The method of ~~claim 6~~ claim 1, wherein the step of defining a compound element comprises defining identifying an element name, a database name, a database command, and database fields in each compound element.

10. (canceled) The method of claim 6, wherein the step of defining a compound element comprises defining an entity path, a database name, a database command, and database fields.

11. (original) The method of claim 1, wherein the step of mapping each of the plurality of elements comprises:

reading the hierarchical data entity;

determining if a root element is present;

ending the mapping process if no root element is present;

mapping each compound element of the plurality of elements if a root element is present;

and

mapping each simple element of the plurality of elements if a root element is present.

12. (original) The method of claim 11, wherein the step of mapping each compound element comprises:

selecting a compound element;  
specifying a data source for the compound element;  
specifying a database command expression for the compound element;  
executing the database command expression;  
receiving a dataset containing fieldnames from the data source;  
adding the dataset fieldnames to a dataset field list in the compound element for enabling simple elements to map to the information in the dataset; and  
repeating the above steps for each compound element.

13. (original) The method of claim 11, wherein the step of mapping each simple element comprises:

selecting a simple element;  
selecting a source dataset fieldname corresponding to the simple element in a dataset field list of a parent element;  
specifying data transformation algorithms associated with the simple element; and  
repeating the above steps for each simple element.

14. (original) The method of claim 1, wherein the step of transforming the relational dataset information comprises:

receiving the mapped plurality of elements;

creating a dataset for each compound element of the plurality of elements that contains a database command expression;

opening the dataset for each compound element;

transforming each compound element in the mapped elements starting with the root element of the mapped elements; and

transforming each simple element of the plurality of elements in the mapped elements.

15. (original) The method of claim 14, wherein the step of transforming each compound element comprises:

selecting a compound element;

locating a dataset that is nearest to a compound element;

creating an instance of the compound element for every record in the dataset; and

repeating the above steps for each compound element.

16. (original) The method of claim 14, wherein the step of transforming each simple element comprises:

selecting a simple element;

extracting values from each dataset field that map to the simple element;

creating a simple element in the hierarchical data structure that corresponds to the simple map element;

transforming data values contained in the dataset fields by transformation algorithms;

adding the transformed values to other values corresponding to the simple map element;

and

repeating the above steps for all simple elements.

17. (original) A computer program embodied on a computer-readable medium incorporating the method of claim 1.

18. (currently amended) A system for sharing data between a relational and a hierarchical database, comprising:

means for defining a hierarchical data entity including a plurality of simple and compound elements, comprising:

means for identifying an entity path and mapped fields in each simple element;

means for identifying an entity path, a database name, a database command, and

database fields in each compound element;

means for mapping each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database, comprising:

for each compound element, means for specifying a data source, specifying a database command, executing the database command, receiving database field names from the relational database, and adding the database field names to the compound element;

for each simple element, means for selecting a database field name in a parent element corresponding to the simple element, and specifying a data transformation algorithm associated with the simple element;

means for transforming the relational dataset information into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure; and

means for accessing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

19. (original) The system of claim 18, wherein the means for defining a hierarchical data entity comprises means for defining a hierarchical data entity including a plurality of elements containing a data entity structure and mapping information.

20. (original) The system of claim 19, further comprising means for identifying each of the plurality of elements by an element name without reference to an entity path.

21. (original) The system of claim 18, wherein the means for defining a hierarchical data entity comprises means for defining a hierarchical data entity including a plurality of elements containing a data entity structure and means for defining a hierarchical map structure corresponding to the hierarchical data entity containing mapping information.

22. (original) The system of claim 21, further comprising means for identifying each of the plurality of elements by an entity path referencing all parent elements in the entity path.

23. (canceled) The system of claim 18, wherein the means for defining a hierarchical data entity comprises means for defining simple elements and compound elements.

24. (currently amended) A system for sharing data between a relational and a hierarchical database, comprising:

a hierarchical data entity having a plurality of simple and compound elements, comprising:

each simple element identifying an entity path and mapped fields;

each compound element identifying an entity path, a database name, a database command, and database fields;

a mapping of each of the plurality of elements in the hierarchical data entity to information in a relational dataset contained in a relational database, comprising:

for each compound element, a specified data source, specified database command,

executed database command, received database field names from the

relational database, and added database field names to the compound element;

for each simple element, a selected database field name in a parent element

corresponding to the simple element, and a specified data transformation

algorithm associated with the simple element;

a transformation of the relational dataset information into corresponding mapped elements in the hierarchical data entity for forming a hierarchical data structure; and a memory containing data from the hierarchical data structure corresponding to the relational dataset information in the relational database.

25. (original) The system of claim 24, wherein the hierarchical data entity comprises a plurality of elements containing a data entity structure and mapping information.

26. (original) The system of claim 24, wherein the hierarchical data entity comprises a plurality of elements containing a data entity structure and a hierarchical map structure.

27. (canceled) The system of claim 24, wherein the hierarchical data entity comprises simple elements and compound elements.

28. (currently amended) The system of ~~claim 27~~ claim 24, wherein each simple element ~~comprises-identifies~~ an element name and mapped fields.

29. (canceled) The system of claim 27, wherein each simple element comprises an entity path and mapped fields.

30. (currently amended) The system of ~~claim 27~~ claim 24, wherein each compound element ~~comprises-identifies~~ an element name, a database name, a database command, and database fields.

31. (canceled) The system of claim 27, wherein each compound element comprises an entity path, a database name, a database command, and database fields.

32. (currently amended) A computer-readable medium containing a data structure for sharing data between relational and hierarchical databases, comprising:

a hierarchical data structure having a plurality of simple and compound elements stored in the memory;

database commands embedded in the compound elements for accessing information in a relational database;

tabular datasets created in the memory for storing the accessed information from the relational database; and

mappings of the plurality of simple and compound elements in the hierarchical data entity to information in relational datasets contained in the relational database if a root element is present, comprising:

for each compound element, means for specifying a data source, specifying a database command, executing the database command, receiving database field names from the relational database, and adding the database field names to the compound element;

for each simple element, means for selecting a database field name in a parent element corresponding to the simple element, and specifying a data transformation algorithm associated with the simple element;

transformations of the relational dataset information into corresponding mapped elements in the hierarchical data entity to form a hierarchical data structure; and  
a relationship between the elements of the hierarchical data structure and the tabular datasets.

33. (original) The computer-readable medium of claim 32, wherein the compound elements comprise:

an element name property;  
a database name property;  
a database command expression; and  
a database fields property.

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34. (original) The computer-readable medium of claim 32, wherein the simple elements comprise an element name property and a mapped fields property.

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